JAN/FY06

WALTER REED ARMY MEDICAL CENTER

Washington, D.C.

Army Defense Environmental Restoration Program Installation Action Plan

Final 21 June 2006

Table of Contents

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Cleanup Program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern, and proposes a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

In an effort to coordinate planning information between the restoration manager, US Army Environmental Center (USAEC), Walter Reed Army Medical Center, executing agencies, and regulatory agencies an IAP was completed. The IAP is used to track requirements, schedules and tentative budgets for all Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

The following persons contributed to the formulation and completion of this Installation Action Plan:

GEO - Walter Reed Army Medical Center
Engineering & Environment, Inc. for USAEC
US Army Center for Health Promotion and Preventive Medicine
HQ, US Army Environmental Center

Acronyms & Abbreviations

AAFES	Army, Air Force Exchange Services
AEDB-R	Army Environmental Data Base - Restoration
AOC	Area of Concern
AST	Aboveground Storage Tank
BLRA	Baseline Risk Assessment
BRAC	Base Realignment and Closure
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CAP	Corrective Action Plan
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
cfm	cubic feet per minute
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
cy	cubic yards
DA	Department of Army
DD	Decision Document
DERA	Defense Environmental Restoration Account (currently called ER,A)
DERP	Defense Environmental Restoration Program
DIS	Directorate of Installation Support
DOD	Department of Defense
DOL	Directorate of Logistics
DPW	Directorate of Public Works
DRMO	Defense Reutilization and Marketing Office
EPA	United States Environmental Protection Agency
ER,A	Environmental Restoration, Army (formerly called DERA)
ESI	Expanded Site Inspection
FS	Feasibility Study
FY	Fiscal Year
HRS	Hazardous Ranking System
HSRA	Hazardous Site Response Act
HW	Hazardous Waste
IAG	Interagency Agreement
IAP	Installation Action Plan
IR	Information Repositories
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LTM	Long-term Management
MACOM	Major Army Command
MCL	Maximum Contaminant Level
MNA	Monitored Natural Attenuation
MU	Manageable Units
NC	GA HSRA Notification Concentration for Soil
NE	Not Evaluated
NFA	No Further Action
NFRAP	No Further Remedial Action Planned
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System

Acronyms & Abbreviations

NPL	National Priorities List
OMA	Operations and Maintenance - Army
OU	Operable Unit
OWS	Oil and Water Separator
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PCE	Perchloroethylene/Tetrachloroethylene
POL	Petroleum, Oil and Lubricants
ppb	parts per billion
ppm	parts per million
PY	Prior Year
RA	Remedial Action
RAB	Restoration Advisory Board
RAO	Remedial Action - Operation
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy in Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RSC	Regional Support Command
RV	Reference Value
S&A	Supervision and Administration
S&R	Supervision and Remediation
SI	Site Inspection
SOW	Scope of Work
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TCE	Trichloroethylene
TCLP	Toxicity Characteristic Leachate Procedure
TERC	Total Environmental Restoration Contract
TPH	Total Petroleum Hydrocarbons
TRC	Technical Review Committee
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Center
UST	Underground Storage Tank
VOC	Volatile Organic Compound
VWR	Vehicle Wash Rack
WRAMC	Walter Reed Army Medical Center
Yr	Year

Installation Information

Installation Locale: Walter Reed Army Medical Center (WRAMC) is split into 3 campuses: Main Post (113 acres), located in the north central side of the District of Columbia, Forest Glen (174 acres), located three miles northwest of Main Post in Maryland, and Glen Haven (20 acres), located four miles northeast of Main Post in Maryland.

Installation Mission:

Develop leadership in clinical readiness for combat and contingency missions.

Exploit advances in wellness, prevention and disease outcomes management for maximum quality of life and health.

Serve as the Army's center of gravity for complex care, clinical education and clinical research.

Become the national leader in outcomes-focused integration of primary and specialty care.

Partner with other services and agencies to promote excellence in military health care with prudent stewardship of resources.

Lead Organization:
Medical Command (MEDCOM)

Lead Executing Agencies:
Walter Reed Army Medical Center/Capital District Contracting Center (CDCC)

Regulatory Participation:
Federal: US Environmental Protection Agency, Region III
State: District of Columbia, Environmental Health Administration and the Maryland Department of the Environment

National Priorities List (NPL) Status: Non-NPL

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status: In FY05, the local community was surveyed to determine if there was sufficient interest to warrant the establishment of a Restoration Advisory Board (RAB). Based on the low response rate, it was concluded that there was insufficient interest to sustain a RAB for WRAMC. The community will be canvassed again in FY07 to determine if the interest level has increased.

Installation Information

Installation Program Summaries:

IRP
Primary Contaminants of Concern: Fuel Oil, PCB
Affected Media of Concern: Groundwater, Soil
Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 2010
Funding to Date: (up to FY05): $ 1,754,000
Current year funding (FY06): $ 243,000
Cost-to-Complete (FY07+): $ 1,473,000

Cleanup Program Summary

Installation Historic Activity: Walter Reed Army Medical Center is an active installation serving as a regional referral medical center for the Army, and a host to the renowned medical research facilities of the Walter Reed Army Institute of Research and the Armed Forces Institute of Pathology.

The first patients were admitted to Walter Reed General Hospital on 1 May 1909. As the mission to integrate patient care, teaching, and research grew, support and tenant activities were added to this three-campus installation. Walter Reed Army Medical Center was officially established in 1977.

The Main Post campus is roughly pentagonal in shape and located in a populous area of the District of Columbia. This campus houses most of the medical treatment activities and one major research activity. The Forest Glen campus and the Glen Haven campus are located in Maryland. Forest Glen contains much of the support facilities to include storage warehouses, maintenance facilities, one major and several small research facilities, and some community facilities. Glen Haven is a residential military housing area.

Regulatory Status:
In 1984, the Army began investigating all potential areas of environmental concern at WRAMC by completing an Installation Assessment. The extent of contamination at WRAMC has not warranted a National Priorities List designation.

In August 1980, WRAMC submitted a Notification of Hazardous Waste Activity, but does not maintain a Resource Conservation and Recovery Act permit.

IRP: WRAMC-05: Current interim remedial actions include passive and active free-product recovery using absorbent pads and vacuum enhanced fluid recovery. Proposed future actions include the inclusion in a performance based contract to bring the site to closure. However as of FY05, the PCB is delayed and WRAMC will proceed to complete the RI/FS stage. Due to the delay, anticipate RC slipping to 2011.
WRAMC-06: Groundwater Sampling and risk assessment shows little risk.
Waiting for DD finalization and EPA to close site.

WALTER REED ARMY MEDICAL CENTER

Installation Restoration Program

IRP Summary

Total AEDB-R Sites/AEDB-R Sites with Response Complete: 6/5

Different Site Types:
3 Tank Areas 2 Waste Storage Areas 1 Transformer Vault

Most Widespread Contaminants of Concern: Fuel Oil, PCB

Media Of Concern: Groundwater, Soil

Completed Removal (REM)/Interim Remedial Action (IRA)/Remedial Action (RA):

Total IRP Funding:

Prior Years (up to FY05):	$ 1,754,000
Current Year Funding (FY06):	$ 243,000
Future Requirements (FY07+)	$ 1,473,000
Total:	$ 3,470,000

Duration of IRP:

Year of IRP Inception: 1993
Year of IRP RIP/RC: 2009
Year of IRP Completion including LTM: 2015

IRP Contamination Assessment

IRP Contamination Assessment Overview

WRAMC has a total of six Defense Site Environmental Restoration Tracking System (DSERTS) sites. These sites include previous underground storage tank locations, storage areas, and a former transformer vault.

Number 2 fuel oil is the primary contaminant of concern at WRAMC. Product, from leaks that may have occurred prior to 1986 on the Forest Glen Section of WRAMC, continues to be removed from groundwater wells at WRAMC-05.

Polychlorinated biphenyls (PCBs) have been detected in the monitoring wells, downgradient of a former transformer vault site. Soil removal and groundwater monitoring have been performed. The results of these activities were used to determine potential health risks at the site. Based upon low risks, WRAMC is seeking regulatory closure. A remote possibility exists that EPA may require Long Term Monitoring at WRAMC-06.

IRP Cleanup Exit Strategy: ***WRAMC-05:*** Continue Enhanced Fluid Recovery (EFR) and passive free product operations. Conduct an RI/FS.

WALTER REED ARMY MEDICAL CENTER

Installation Restoration Program Site Descriptions

WRAMC-05
FOREST GLEN - BUILDING 500

SITE DESCRIPTION

WRAMC-05 is located adjacent to Building 500 in the southern portion of Forest Glen, near the intersection of Brookville Road and Research Drive. According to Hydrogeologic Investigation No. 38-EH-8209-98, 11-14 May 1998, conducted by the U. S. Army Center for Health Promotion and Preventive Medicine to investigate contamination of the soil and groundwater, in May 1988, a thin film of oil was observed on the ground water in an excavation located 25 feet west of the north corner of Building 512. WRAMC staff notes, dated September 1988, indicate that a 50,000 gallon UST located near Building 500 failed the tightness testing conducted in June 1988. Ten monitoring wells were installed in June 1989, and the concentrations of groundwater contamination were minimal. In December 1992, a 12,000-gallon UST located near Building 500 was removed. Roughly, 5,000 gallons of free product was pumped from the excavation. Ten monitoring wells were installed in December 1992 and February 1993. Two 50,000 gallon USTs located near Building 500 were removed in January 1993. A bailing program was initiated in November 1993. A pump and treat system was installed in March 1994. In 1999, two of the monitoring wells were converted to recovery wells. In 2001, two more monitoring wells were installed across the street from the site to determine whether the fuel oil is migrating. One of the monitoring wells contained at least six inches of free product. In April 2002, the active pumping system was shut off based on the GWETER, because only limited quantities could be recovered from the saprolite. And three monitoring wells were installed to attempt to further delineate the plume. Free product is being recovered by absorbent material suspended in eleven wells. In addition, detergent assisted vacuum Enhanced Fluid Recovery (EFR) has been periodically performed in the six wells that have regularly contained significant free-product

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
Fuel

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	199001	199202
SI	199804	199806
RI	199807	200706
RD	200312	200710
IRA	199401	200710
RA(C)	200409	200902
RA(O)	200409	201105
LTM	201106	201505

RIP DATE: 200902
RC DATE: 201105

CLEANUP STRATEGY

Continue Enhanced Fluid Recovery (EFR) and passive free product operations. Conduct an RI/FS.

WRAMC-06
PCB CLEANUP AT RUMBAUGH GARAGE SITE

SITE DESCRIPTION

This site is located along the northern Main Post boundary, near the intersection of Fern Street and 13th Place, approximately 70 feet north of the Rumbaugh Parking Garage. A subsurface transformer vault was installed at the site in 1961. The transformer and the vault were removed in 1992 during the construction of the Rumbaugh Parking Garage. PCB soil contamination was detected and excavated in 1992 and again in 1993. Although PCBs were again identified at the bottom of the excavation, WRAMC petitioned the US EPA to allow backfilling of the excavation based on the fact that the site presented a safety hazard. A letter dated 19 November 1993 from EPA Region III, concurred with the decision to backfill the excavation provided that WRAMC put a contract in place to investigate the extent of whatever PCB contamination remains and whether contamination of the groundwater has occurred; submit a copy of the contractor's plan to achieve this investigation for EPA's review; complete the work required by the investigation findings; include a statement in the "deed" of the property to alert future owners of the presence and location of and PCB contamination left on-site; forward a copy of all documentation and results in the investigation phase to EPA; and request local guidance from the D.C. government. An investigation was conducted by USACHPPM in August and October 1996 to determine the extent of PCB contamination in the groundwater. No PCBs were detected in the groundwater. One soil sample had PCBs (1.18 ug/kg) well below the EPA decontamination requirement. In 1997, the monitoring wells were resampled: no PCBs were detected and WRAMC began moving to site closure. However, in October 2000 and again in February 2001, PCBs were detected in two downgradient monitoring wells at 0.9 and 1.1 ug/L, and 1.3 and 0.84ug/L, respectively. Two additional monitoring wells were installed further downgradient in June to verify the direction of groundwater flow and the extent of the plume. One of the newer wells did contain low levels of PCBs. In FY04, WRAMC completed a Human Health Risk Assessment that showed low potential risks. WRAMC completed quarterly groundwater monitoring in September 2004.

STATUS

REGULATORY DRIVER: Toxic Substance Act

RRSE: Low

CONTAMINANTS OF CONCERN: POL, PAH

MEDIA OF CONCERN: Soil, Groundwater

Phases	Start	End
RFA	199201	199203
CS	199204	199604
RFI/CMS	199605	200607

RC: 200607

CLEANUP STRATEGY

WRAMC has submitted DD to EPA Region III recommending No Further Action (NFA) and is awaiting concurrence. Upon EPA concurrence with NFA recommendation, WRAMC will close monitoring wells. Response is expected FY 06.

IRP No Further Action Sites Summary

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
WRAMC-01	HAZWASTE STORAGE FACILITY, BLDG 40	Not eligible for IRP funding – revised to Response Complete March 2000	199306
WRAMC-02	WASTE OIL UNDERGROUND STORAGE TANK	Tank Removed	199202
WRAMC-03	INFECTIOUS WASTE STORAGE FACILITY	Not eligible for IRP funding	199210
WRAMC-04	GLEN HAVEN UNDERGROUND OIL PIPE	Cleanup Completed – Wells Removed	200304

IRP Schedule

Initiation of IRP: 1984

1984
- PA/SI - Initiation

1990
- PA/SI - Completion

1992
- WRAMC-06 - Soil Removal

1993
- WRAMC-06 - Soil Removal
- WRAMC-05 - Tank and Product Removal

1994
- WRAMC-05 - GW Pump and Treat
- WRAMC-06 - Monitoring Wells

1996
- WRAMC-04 - Pipe Fill and Soil Removal

1997
- WRAMC-04 - Soil Removal
- WRAMC-04 - Complete RA for Soils

1998
- WRAMC-05 - Conduct RI
- WRAMC-06 - Conduct RI

1999
- WRAMC-05 - Conversion of 2 Monitoring Wells

2000
- WRAMC-06 - Installed 2 Monitoring Wells

2001
- WRAMC-05 - Installed 2 Monitoring Wells

2002
- WRAMC-05- Installed 3 Monitoring Wells and Shut-off active pump and treat system

2004
- WRAMC-06 – Completed Monitoring of Groundwater

IRP Schedule

Past Phase Completion Milestones

2006

- RC - WRAMC-06 - Jun

2007

- RI/FS - WRAMC-05 - Jun

Projected Completion Date of All RAs: 2011
Projected Completion Date of All IRP: 2011

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates:

Projected Construction Completion Date of IRP: 2009

Schedule for Next Five-Year Review: *Unknown*

Projected Completion Date of IRP (including LTM phase): 2011

Prior Years Funds

Total Funding up to FY04: $ 1,693K

Year	Site Information		Expenditures	FY Total
FY05	WRAMC-05	IRA	60.44	
	WRAMC-06	RI	0.74	**61,180**

Total Prior Year Funds: $ 1,754K

Current Year Requirements

Year	Site Information		Expenditures	FY Total
FY06	WRAMC-05	IRA	70.000	
		RI	173.000	**$243,000**

Total Future Requirements: $ 1,473K

Total IR Program Cost (from inception to completion of the IRP): **$ 3,470K**

Community Involvement

The surrounding community for WRAMC includes the highly populated North Central portion of the District of Columbia; Wheaton, Maryland, and Silver Spring, Maryland. In 2005, WRAMC canvassed the surrounding communities for potential interest in establishing a RAB.

WRAMC sent a mailing to local residents explaining what environmental actions are ongoing and included a response card to mail for further information. Two response cards were returned indicating minor interest in establishing a RAB.

Based on the results of Walter Reed Army Medical Center's efforts to determine interest in forming a RAB, it has been determined that there is not enough interest to establish or sustain a RAB at this time.

WRAMC is committed to involving the public with its IRP, and recognizes that interest in these activities can change over time. WRAMC will monitor community interest every two years. In FY07, WRAMC will again canvas the community for interest in establishing a RAB.

Interest in the Technical Assistance for Public Participation (TAPP) Program. Not Applicable.